



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,734	03/06/2002	Takeki Shirai	101160-00021	5392

4372 7590 09/28/2006

ARENT FOX PLLC  
1050 CONNECTICUT AVENUE, N.W.  
SUITE 400  
WASHINGTON, DC 20036

EXAMINER

HANNON, THOMAS R

ART UNIT

PAPER NUMBER

3682

DATE MAILED: 09/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/090,734

Applicant(s)

SHIRAI ET AL.

Examiner

Thomas R. Hannon

Art Unit

3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9 and 16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09/142139.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                            |                                                                                         |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                           | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

Art Unit: 3682

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 16 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no support in the original specification for claiming the combination of a stainless steel sheet having through holes being disposed on one side of the plurality of balls.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16, which now depends from amended claim 9, is not understood. The claim recites structure relating to the stainless steel sheet being disposed on one side of the plurality of balls, yet claim 9 recites the stainless steel sheet formed in a strip having a plurality of through holes. It is not understood how the stainless steel sheet having through holes is disposed on one side of the plurality of balls. Claim 16 appears to be improperly combining the embodiments of Figures 10-12 (showing the strip with through holes) and that of Figures 12 and 13 (having a connecting portion on one side of the balls). These two embodiments are mutually exclusive, as

Art Unit: 3682

the strip cannot have both through holes and be disposed on one side of the balls. A patentability determination based on prior art cannot be made due to the indefiniteness of the claim.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lunz (WO 92/14070) in view of Teramachi (Japan 05052215). Lunz disclose a linear guide chain having a plurality of rolling members rotatably arranged in one row in a connector belt (30), the connector belt comprising a metal sheet formed in a strip shape and having a plurality of through holes (32) larger than the cross section of the rolling members (as seen in Figures 9 and 10) for containing the rolling members, and a plurality of holding members (31) interposed among the respective through holes, and including mating seats for embracing a face of each of the plurality of rolling members. The rolling members of Lunz are shown to be rollers. Teramachi '215 discloses a rolling member chain in which the rolling members are balls. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the chain member of Lunz to accommodate balls, because the use of balls as rolling members in a linear guide is taught and suggested by Teramachi '215. Such a modification to accommodate balls in the cage of Lunz would result in the obvious configuration of through holes in the sheet having a diameter larger than the ball and spherical seat on the holding member 31 to embrace the corresponding spherical surface of the balls. With respect to the specific material of the metal sheet, the choice

Art Unit: 3682

of a specific metal would have been obvious to one of ordinary skill in the art dependent of the particular properties desired.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lunz (WO 92/14070) in view of Jacob US 5,156,462. Lunz disclose a linear guide chain having a plurality of rolling members rotatably arranged in one row in a connector belt (30), the connector belt comprising a metal sheet formed in a strip shape and having a plurality of through holes (32) larger than the cross section of the rolling members (as seen in Figures 9 and 10) for containing the rolling members, and a plurality of holding members (31) interposed among the respective through holes, and including mating seats for embracing a face of each of the plurality of rolling members. The rolling members of Lunz are shown to be rollers. Jacob '462 discloses a rolling member chain in which the rolling members are balls. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the chain member of Lunz to accommodate balls, because the use of balls as rolling members in a linear guide is taught and suggested by Jacob '462. Such a modification to accommodate balls in the cage of Lunz would result in the obvious configuration of through holes in the sheet having a diameter larger than the ball and spherical seat on the holding member 31 to embrace the corresponding spherical surface of the balls. With respect to the specific material of the metal sheet, the choice of a specific metal would have been obvious to one of ordinary skill in the art dependent of the particular properties desired.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lunz (WO 92/14070) in view of Jacob US 4,944,607. Lunz disclose a linear guide chain having a plurality of rolling members rotatably arranged in one row in a connector belt (30), the connector belt

Art Unit: 3682

comprising a metal sheet formed in a strip shape and having a plurality of through holes (32) larger than the cross section of the rolling members (as seen in Figures 9 and 10) for containing the rolling members, and a plurality of holding members (31) interposed among the respective through holes, and including mating seats for embracing a face of each of the plurality of rolling members. The rolling members of Lunz are shown to be rollers. Jacob '607 discloses a rolling member chain in which the rolling members are balls. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the chain member of Lunz to accommodate balls, because the use of balls as rolling members in a linear guide is taught and suggested by Jacob '607. Such a modification to accommodate balls in the cage of Lunz would result in the obvious configuration of through holes in the sheet having a diameter larger than the ball and spherical seat on the holding member 31 to embrace the corresponding spherical surface of the balls. With respect to the specific material of the metal sheet, the choice of a specific metal would have been obvious to one of ordinary skill in the art dependent of the particular properties desired.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lunz (WO 92/14070) in view of Teramachi et al. US 5,755,516. Lunz disclose a linear guide chain having a plurality of rolling members rotatably arranged in one row in a connector belt (30), the connector belt comprising a metal sheet formed in a strip shape and having a plurality of through holes (32) larger than the cross section of the rolling members (as seen in Figures 9 and 10) for containing the rolling members, and a plurality of holding members (31) interposed among the respective through holes, and including mating seats for embracing a face of each of the plurality of rolling members. The rolling members of Lunz are shown to be rollers. Teramachi '516 discloses a

Art Unit: 3682

rolling member chain in which the rolling members are balls. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the chain member of Lunz to accommodate balls, because the use of balls as rolling members in a linear guide is taught and suggested by Teramachi '516. Such a modification to accommodate balls in the cage of Lunz would result in the obvious configuration of through holes in the sheet having a diameter larger than the ball and spherical seat on the holding member 31 to embrace the corresponding spherical surface of the balls. With respect to the specific material of the metal sheet, the choice of a specific metal would have been obvious to one of ordinary skill in the art dependent of the particular properties desired.

Applicant's arguments filed August 23, 2006 have been fully considered but they are not persuasive. Applicant's arguments with respect to the combination rejection based on Lunz notes that "Lunz fails to disclose or suggest at least the feature of spherical seats for embracing a spherical face of each of the plurality of balls". However, as noted in the rejections, *supra*, the combination of Lunz with the known use of balls as rolling elements necessarily results in spherical seats for seating spherical balls. That is, one of ordinary skill when making the obvious combination would not bodily incorporate spherical balls into the cage of Figures 9 and 10 having the cylindrical seats for cylindrical rollers, but would modify the cage of Lunz to include spherical seats for spherical balls.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 3682

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas R. Hannon whose telephone number is (571) 272-7104. The examiner can normally be reached on Monday-Thursday (8:30-7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 3682

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Thomas R. Hannon  
Primary Examiner  
Art Unit 3682

trh